

CLAIMS

What is claimed is:

1. A surgical irrigation pump and tool system, comprising:
a console having a peristaltic pump disposed within the console and an
5 aperture;
a surgical irrigation tool coupled to the console and having a tube set for
delivery of a liquid through the tool; and,
an insertable cassette having an external portion and a pump engaging
portion, the insertable cassette being insertable through the aperture in the console such
10 that the external portion is external to the console and the pump engaging portion is
internal to the console and coupled to the pump, the tube set being contained in the
insertable cassette, the peristaltic pump engaging the tube set to compress the tubes set
thereby providing a pulsatile flow of irrigation fluid to the tool.
2. A surgical irrigation pump and tool system, as set forth in claim
15 1, the insertable cassette having a rear cavity with a concave pumping wall.
3. A surgical irrigation pump and tool system, as set forth in claim
2, the tube set including a compressible tube located adjacent the concave pumping wall.
4. A surgical irrigation pump and tool system, as set forth in claim
3, the insertable cassette having a housing and first and second tube connectors integral
20 with the housing.

5. A surgical irrigation pump and tool system, as set forth in claim 4, the tube set including an inlet tube and an outlet tube, the inlet tube being connected to one end of the first tube connector and the out tube being connected to one end of the second tube connector, one end of the compressible tube being connected to the other end of the first tube connector and the other end of the compressible tube being connected to the other end of the second tube connector.

6. A surgical irrigation pump and tool system, as set forth in claim 4, the housing forming an input tube channel and an output tube channel each having a first open end at the external portion and a second open end at the pump engaging portion, the pump engaging portion including first and second integral clips for receiving and retaining first and second tube connected, the tube set including an inlet tube and an outlet tube, the inlet tube being inserted through the input tube channel and connected to the first tube connector, the output tube being inserted through the output tube channel connected to the second tube connector, the compressible tube being connected to an between the first and second tube connector.

7. A surgical irrigation pump and tool system, as set forth in claim 1, further comprising a pump roller assembly coupled to the pump by a shaft, the pump roller assembly including first and second interlocking hubs and a plurality of rollers slidably and rotatably connected to the first and second interlocking hubs.

8. A surgical irrigation pump and tool system, as set forth in claim 7, further comprising a plurality of springs coupled between the hubs and the rollers for biasing the rollers in an outward direction.

9. A surgical irrigation pump and tool system, a set forth in claim 1, further comprising a locking mechanism for maintaining or holding the insertable cassette in the console.

10. A surgical irrigation pump and tool system, as set forth in claim 9, wherein the locking mechanism includes a locking lever pivotally connected to the insertable cassette and being movable between a locking position and an unlocking position.

11. A surgical irrigation pump and tool system, as set forth in claim 9, the locking mechanism including an ejection bar and a locking arm.

12. An insertable cassette for use in a surgical irrigation pump and tool system, the system having a console, and a peristaltic pump disposed within the console, comprising:

a tube set; and,

a housing having an external portion and a pump engaging portion, the tube set being contained in the insertable cassette, the housing having a rear cavity with a concave pumping wall, the tube set including a compressible tube located adjacent the concave pumping wall.

13. An insertable cassette, as set forth in claim 12, the housing having first and second tube connectors integral with the housing.

14. An insertable cassette, as set forth in claim 13, the tube set including an inlet tube and an outlet tube, the inlet tube being connected to one end of

the first tube connector and the out tube being connected to one end of the second tube connector, one end of the compressible tube being connected to the other end of the first tube connector and the other end of the compressible tube being connected to the other end of the second tube connector.

5 15. An insertable cassette, as set forth in claim 4, the housing forming an input tube channel and an output tube channel each having a first open end at the external portion and a second open end at the pump engaging portion, the pump engaging portion including first and second integral clips for receiving and retaining first and second tube connected, the tube set including an inlet tube and an outlet tube, the
10 inlet tube being inserted through the input tube channel and connected to the first tube connector, the output tube being inserted through the output tube channel connected to the second tube connector, the compressible tube being connected to an between the first and second tube connector.

 16. An insertable cassette, a set forth in claim 12, further comprising
15 a locking mechanism for maintaining or holding the insertable cassette in the console.

 17. An insertable cassette, as set forth in claim 16, wherein the locking mechanism includes a locking lever pivotally connected to the insertable cassette and being movable between a locking position and an unlocking position.

 18. An insertable cassette, as set forth in claim 16, the locking
20 mechanism including an ejection bar and a locking arm.

19. A pump roller assembly for compressing a tube against concave pumping wall, the pump roller assembly being coupled to and being rotated by a pump motor having a shaft, comprising:

5 first and second interlocking hubs, each hub having a generally circular shape and an aperture, the first and second interlocking hubs being adapted to snap together, the aperture for receiving the shaft;

at least one pin rotatably connected between the first and second interlocking hubs;

10 at least one roller, the at least one roller having a center aperture for receiving a respective pin, each roller having a center section and a flange for controlling compression of the compressible tube 348C between the roller and the concave pumping wall.

20. A pump roller assembly, as set forth in claim 19, the at least one pin having a groove on each end, each hub having at least one slot for receiving the
15 grooves.

21. A pump roller assembly, as set forth in claim 19, further comprising at least one spring for biasing the at least one roller in an outward direction.